

EMOTIONAL INTELLIGENCE AS A MEDIATOR IN PERSONALITY TRAITS
AND DIGITAL LITERACY TO CUSTOMER-ORIENTED BEHAVIOUR
AMONG NURSING STUDENTS IN MALAYSIA

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UNIVERSITI TEKNOLOGI MALAYSIA

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DEDICATION

This thesis is dedicated to my husband, who taught me that the best kind of knowledge to have is that which is learned for its own sake. It is also dedicated to my mother and father, who taught me that even the largest task can be accomplished if it is done one step at a time. This thesis is also dedicated to my beloved daughter who makes me determined to always give my best.

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ABSTRACT

Malaysia's healthcare sector is presently facing increasing challenges and growing expectations from patients. Recent reports from the Ministry of Health (MoH) Malaysia reflect an increasing number of complaints from public hospitals on unsatisfied service quality, which involved nursing services. Nursing graduates have been criticized for their unsatisfactory attitudes towards patients and declining standard service performance. Satisfaction with nursing services has been reported to contribute significantly to overall perceptions of healthcare service quality. The study adopts the customer-oriented behaviour concept since it is a crucial antecedent in healthcare service delivery and could facilitate better relationships and interactions between nurses and patients. Therefore, the objectives of this study were to (1) investigate the relationships between the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism), digital literacy traits, emotional intelligence, and customer-oriented behaviour among Malaysian nursing students, and (2) determine the mediating effects of emotional intelligence on the relationships presented in the first objective. Trait theory was applied to underpin the framework of this research. A stratified random sampling technique was applied to collect data online and 437 responses were recorded. Partial Least Square - Structural Equation Modelling was performed using SmartPLS 3.1.9, while descriptive statistics were analysed using SPSS. Resultantly, digital literacy was a significant determinant of customer-oriented behaviour among Malaysian nursing students. Emotional intelligence was found to mediate the relationships between openness to experience, conscientiousness, neuroticism, digital literacy trait, and customer-oriented behaviour. However, extraversion and agreeableness were not significantly related to emotional intelligence and customer-oriented behaviour and no mediating effect was observed. The findings of this research revealed significant empirical evidence on the importance of digital literacy in promoting customer-oriented behaviour among Malaysian nursing students. In addition, the significance of mediating effects of emotional intelligence on the relationships between openness to experience, conscientiousness, neuroticism, digital literacy trait and customer-oriented behaviour serve as a new contribution to the literature. Also, the role of emotional intelligence towards customer-oriented behavior is an important contribution in this research. Practically, the research findings could be a beneficial guideline for Student Recruitment Department to enrol the best candidates with the right trait into the nursing programme. This research is limited to a cross-sectional design to test mediation and self-reporting questionnaires that may create a sense of biased response. Therefore, future studies should consider a longitudinal design and supervisor's rating questionnaires to reduce respondents' bias.

ABSTRAK

Sektor kesihatan di Malaysia pada masa ini menghadapi cabaran dan harapan yang semakin meningkat dari pesakit. Laporan terkini daripada Kementerian Kesihatan Malaysia (KKM) menunjukkan peningkatan jumlah aduan dari hospital awam mengenai kualiti perkhidmatan yang tidak memuaskan yang melibatkan perkhidmatan kejururawatan. Generasi baru lulusan kejururawatan dikritik kerana sikap mereka yang tidak memuaskan terhadap pesakit dan kemerosotan prestasi perkhidmatan standard. Kepuasan terhadap perkhidmatan kejururawatan dilaporkan memberikan sumbangan lebih signifikan daripada perkhidmatan lain kepada persepsi keseluruhan terhadap kualiti perkhidmatan penjagaan kesihatan. Kajian ini menggunakan konsep tingkah laku berorientasikan pelanggan yang merupakan anteseden penting dalam penyampaian perkhidmatan penjagaan kesihatan kerana dapat mencapai hubungan dan interaksi lebih baik antara jururawat dan pesakit. Oleh itu, kajian ini bertujuan untuk (1) mengkaji hubungan antara sifat personaliti *Big Five* (keterbukaan terhadap pengalaman, kesedaran, *extraversion*, kesepakatan dan neurotisme), sifat literasi digital, kecerdasan emosi dan tingkah laku berorientasikan pelanggan pelajar kejururawatan Malaysia dan (2) menentukan kesan perantaraan kecerdasan emosi terhadap hubungan yang dinyatakan dalam objektif pertama. Teori sifat telah digunakan untuk menyokong kerangka penyelidikan ini. Teknik pensampelan rawak berstrata telah digunakan untuk mengumpulkan data secara dalam talian dan 437 respons telah direkodkan. Pemodelan Persamaan Struktur – Kuasa Dua Terkecil Separa dilakukan dengan menggunakan SmartPLS 3.1.9, sementara statistik deskriptif dianalisis menggunakan SPSS. Hasil kajian mengesahkan bahawa sifat literasi digital adalah penentu tingkah laku berorientasikan pelanggan di kalangan pelajar kejururawatan Malaysia. Kecerdasan emosi didapati dapat mempengaruhi hubungan antara keterbukaan terhadap pengalaman, kesedaran, neurotisme, sifat literasi digital dan tingkah laku yang berorientasikan pelanggan. Walau bagaimanapun, penjelajahan dan kesepakatan didapati tidak berkaitan secara signifikan dengan kecerdasan emosi dan tingkah laku berorientasikan pelanggan dan tidak ada kesan pengantara. Hasil kajian ini menunjukkan bukti empirikal yang penting mengenai kepentingan sifat literasi digital dalam mempromosikan tingkah laku berorientasikan pelanggan di kalangan pelajar kejururawatan Malaysia. Pentingnya kesan pengantara kecerdasan emosi terhadap hubungan antara keterbukaan terhadap pengalaman, kesedaran, neurotisme, sifat literasi digital dan tingkah laku berorientasikan pelanggan adalah sumbangan baru kepada literatur. Selain itu, peranan kecerdasan emosi ke arah tingkah laku berorientasikan pelanggan adalah sumbangan penting dalam penyelidikan ini. Secara praktikal, penemuan penyelidikan ini boleh menjadi garis panduan yang bermanfaat bagi Jabatan Pengambilan Pelajar untuk mendaftarkan calon terbaik dengan ciri-ciri yang betul ke dalam program kejururawatan. Penyelidikan ini terbatas pada reka bentuk keratan rentas untuk menguji soal selidik mediasi dan pelaporan diri yang boleh menimbulkan tanggapan berat sebelah. Oleh itu, dicadangkan agar kajian masa depan harus menggunakan reka bentuk selanjut dan soal selidik penilaian penyelia untuk mengurangkan berat sebelah responden.

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LIST OF ABBREVIATION

AVE	-	Average Variance Extracted
BEIS	-	Brief Emotional Intelligence Scale
BFI	-	Big Five Inventory
CB-SEM	-	Covariance-Based – Structural Equation Modelling
CI	-	Confidence interval
COB	-	Customer-Oriented Behaviour
COR	-	Customer Orientation
CVI	-	Content Validity Index
CWB	-	Counterproductive Workplace Behaviour
DLQ-LL	-	Digital Literacy Questionnaire – Language Learners
ECI	-	Emotional Competency Inventory
EI	-	Emotional Intelligence
EIS	-	Emotional Intelligence Scale
EL	-	Emotional Labour
EPE	-	Expression of Positive Emotion
EQ-i	-	Emotional Quotient Inventory
FFM	-	Five Factor Model
FLE	-	Frontline Employees
GDP	-	Gross Domestic Product
GoF	-	Goodness-of-Fit
HPWPs	-	High-Performances Work Practices
HR	-	Human Resources
HTMT	-	Heterotrait-Monotrait Ratio of Correlation
ICT	-	Information and Communication Technology
I-CVI	-	Item – Content Validity Index
ILKKM	-	Institut Latihan Kementerian Kesihatan Malaysia
IoMT	-	Internet of Medical Things
IPMA	-	Importance-Performance Matrix Analysis
IQ	-	Intellectual Quotient
IWB	-	Innovative Work Behaviour
JI	-	Job Involvement
KM	-	Knowledge Management
K-M-O	-	Kaiser-Meyer-Olkin
MARKOR	-	Market Orientation
MBTI	-	Myers Brigg Type Indicator
MEIS	-	Multifactor Emotional Intelligence Scale
MoH	-	Ministry of Health
MSCEIT	-	Mayer-Salovey-Caruso Emotional Intelligence Test
OSC	-	Organisational Social Capital
PBC	-	Perceived-Behavioural Control
PCO	-	Proactive Customer Orientation
PF	-	Personality Factor
PLS-SEM	-	Partial Least Squares – Structural Equation Modelling
QoWL	-	Quality of Work-Life
RCO	-	Responsive Customer Orientation

SAT	-	Scholastic Aptitude Test
S-CVI	-	Scale – Content Validity Index
SI	-	Spiritual Intelligence
SNE	-	Suppression of Negative Emotion
SOCO	-	Selling Orientation-Customer Orientation
SPM	-	Sijil Pelajaran Malaysia
SPSS	-	Statistical Package for Social Sciences
SRMR	-	Standardised Root Mean Square Residual
STPM	-	Sijil Tinggi Pelajaran Malaysia
TI	-	Turnover Intentions
UTM	-	Universiti Teknologi Malaysia
VIF	-	Variance Inflation Factor
WE	-	Work Engagement
WFC	-	Work-Family Conflict

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter introduces the overview of the study, background to the problem, statement of the research problem and outlines the path of the study towards solving the problem. It starts with a brief overview of the Malaysian healthcare service context in general and then narrows down to the relationship between personality traits, digital literacy, emotional intelligence and customer-oriented behaviour. The chapter highlights the existing gaps in the literature and presents the research objectives and questions, research scope and significance of the study in terms of theoretical and practical contributions. In addition, the chapter also presents the operational definitions for all the important terms used in this study, organisation of the report and summary.

1.2 Overview of the Study

In today's rapidly developing world, customers have been acknowledged as the essence of the success of an organisation. Past studies have indicated that the success of an organisation is influenced by its ability to manage a positive relationship with existing and potential customers (Ngo *et al.*, 2018; Soltani *et al.*, 2018). Notably, organisations have incorporated a customer orientation approach into their organisational management and employee training (Soltani *et al.*, 2018).

The concept of customer orientation was derived from market orientation as one of its subsets (Jaworski and Kohli, 1993). Customer orientation is defined as a concept and belief that always prioritises the interests of customers and encompasses

owners, managers and employees in order to ensure a sustainable and successful business (O'Dwyer and Gilmore, 2018). Customer orientation has been widely acknowledged to be highly pertinent in the service industry (O'Dwyer and Gilmore, 2018; Zhang and Yang, 2018). Service employees represent the service organisation to the customer (Soltani *et al.*, 2018) and interact personally with customers in both retail and service encounters (Sirianni *et al.*, 2009). Due to the inherent intangibility of the service and its interactive nature, the assessment of performance and service quality by customers relies to a large extent on the attitude and behaviours of frontline employees (Jena, 2017). In fact, research by Grizzle *et al.*, (2009) has established that customer orientation can lead to customer-oriented behaviours.

Customer-oriented behaviour refers to specific behaviours demonstrated by service personnel during service encounters, which lead to satisfied customers (Bruno, Dell'Aversana, and Zunino, 2017). Customer-oriented behaviour is indicated as the useful and practical behaviours displayed by employees towards organisational customers. It fosters high-quality service delivery, increases customer satisfaction and assists the organisation in addressing changing customer needs (Tang and Tang, 2012; Bruno *et al.*, 2017). Many researchers from different global perspectives have highlighted the critical importance of frontline employees' customer-oriented behaviour in delivering quality service and retaining customer satisfaction (Bruno *et al.*, 2017; Chen and Chen, 2010; Converso *et al.*, 2015; El Othman *et al.*, 2020).

Lanjananda and Patterson (2009) and Ong and Johari (2013) highlighted the importance of customer-oriented behaviour in the healthcare sector in order to deliver a higher standard of nursing care. Chien *et al.* (2008) described customer-oriented behaviour in the healthcare context as the degree to which nurses understand the needs and desires of patients. Accordingly, the behavioural patterns of nursing staff, especially customer-oriented behaviour, are based on internal mutual cooperation and long-term external relationship care. Both internal and external behavioural interventions can produce better results in service delivery and provide excellent service quality in real practice (Chien *et al.*, 2008).

As the behaviour of nurses moves towards a sustainable advantage in service quality, Ong and Johari (2013) suggested that the new generation of the nursing workforce should adapt their customer-oriented behaviour according to the customised needs of the patient to provide them with better service or treatment. Without having a clear understanding of customer-oriented behaviour, the nursing workforce would not be able to effectively execute their responsibilities and prioritise the patients' needs (Lim, 2016). Consequently, proper care and attention may not be received by the patients. Hence, the present study aims to investigate the customer-oriented behaviour of Malaysian nursing students in public nursing colleges since they are the future nursing workforce in the healthcare sector.

Personality traits have been reported to anticipate and explain human behaviour in the workplace (Gupta and Gupta, 2020). Personality traits are known to be a consistent set of characteristics which are responsible for the personality of individuals and therefore influence their behaviour (Kinicki, 2008). According to Schultz and Schultz (2016), personality traits are unique and relatively stable external and internal aspects of an individual's character, which influence behaviour in various circumstances. Past studies have recognised and specified the underlying traits that explain people's behaviour through personality trait theories (Allport, 1961). John *et al.* (2008) also discovered that personality traits are able to offer useful information regarding an individual. This is supported by the previous studies that demonstrated the influence of personality traits on individuals' behaviour (Zafar and Meenakshi, 2012; Gupta and Gupta, 2020).

Researchers have employed personality traits as predictors to determine customer-oriented behaviour given that they represent individuals' innate characteristics (Johari and Ong, 2013; Mechinda and Patterson, 2011; Watrous, 2010). These studies further demonstrated that personality traits have a significant relationship with customer-oriented behaviour. In addition, basic personality traits and customer orientation surface traits were also found to reflect significant effect on customer-oriented behaviour (Lanjananda and Patterson, 2009). In the Malaysian context, Johari and Ong (2013) reported a significant relationship between Big Five personality traits and customer-oriented behaviour in Malaysia's health tourism

hospitals. Hence, studies conducted in Malaysia and elsewhere concluded that a remarkable relationship exists between personality traits and customer-oriented behaviour.

Researchers have classified personality as meta-traits of stability that consist of conscientiousness, neuroticism and agreeableness, as well as beta-traits stream that includes extraversion and openness to experience (Hui-Hua and Schutte, 2015). These fundamental traits profoundly influence individual behaviour (Dan *et al.*, 2021). The existing debate in personality literature is the approach to analysing the constructs. Different models have been developed, but the most common are the Myers-Briggs type indicator (Myers and Myers, 2010) and the Big Five personality model (Costa and McCrea, 1992). The Big Five model comprises five major traits, which are easily remembered by the acronyms OCEAN (Openness to experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism) (El Othman *et al.*, 2020). The Big Five model has been preferred in psychology and management research (DeShong *et al.*, 2015; Thompson and Prendergast, 2015), and is recognised as the best representation of personality structures across various cultures (Dan *et al.*, 2021; Harari *et al.*, 2014). It has also been proven as a robust indicator to determining an individual's personality (Wortmann *et al.*, 2012).

Aside from personality traits as the predictor variables, other factors that may influence customer-oriented behaviour can also be examined. In this 21st century era, technology adoption in education has become prevalent and nursing and health science education are no exception (Diño and Ong, 2019). Over the past few years, students have mastered the use of technology due to the emergence of portable technologies such as tablets, smartphones and laptops (Incerti, 2013). A new generation of nursing students, Generation Z, also known as iGeneration, iGen, post-Millennials or Homelanders (Chicca, 2019) is entering undergraduate educational programmes and transiting into the healthcare workforce (Hampton and Keys, 2016). Generation Z, also known as Gen Z, is a group of digitally literate people who were born after 1992, which is after the invention of digital technology (Prensky, 2001). Digital technology plays a crucial role in providing opportunities for this generation. Hence, contemporary nursing students are anticipated to adopt

technology in their studies while simultaneously multitasking (Campbell and Daley, 2013). Hence, it is crucial to elucidate the effect of digital literacy on customer-oriented behaviour among nursing students.

On the other hand, nursing students are in a critical stage of development given that they lack confidence, autonomy, and knowledge since they are yet to reach professional competence. They are also exposed to the challenges related to healthcare settings, such as suffering and death (Aradilla-Herrero *et al.*, 2013). Emotional intelligence has been found to be associated with the skills required to manage such challenges, which comprise self-awareness, assertiveness and stress management (Chan *et al.*, 2014; Holston and Taylor, 2016). In recent years, the concept of emotional intelligence has emerged as a major focus of psychological research - a construct coined by Salovey and Mayer (1990) and made popular by Goleman (1995). Emotional intelligence is described as the ability to recognise, utilise, understand and manage emotions in oneself, others and our relationships in a positive way (Holston and Taylor, 2016).

Emotional intelligence has been shown to affect the personal and professional success of people in life. Wilkins (2014) argued that emotional intelligence is a major predictor of professional success. One of the fundamental emotional abilities that assist individuals in recognising and giving meaning to their emotions is emotional awareness (Kaya *et al.*, 2018). Individuals with high emotional awareness influence their values, objectives, strengths and limits, where and why these emotions exist, deciding on their life and career can also make better choices (Foster *et al.*, 2017; Kaya *et al.*, 2018).

In the nursing context, Foster *et al.* (2017) conducted a longitudinal study on 111 nursing students and found that emotional intelligence grew substantially in the first year of their studies. However, no additional significant improvements were observed in the final year of their study. Fernandez *et al.* (2012) also reported that students' emotional intelligence increased throughout their studies and it was associated with age, with mature students exhibiting higher levels of emotional intelligence than recent high-school graduates. Meanwhile, lower levels of

post-traumatic development were observed for nursing students with low or high emotional intelligence than for those with an intermediate level of emotional intelligence (Li *et al.*, 2015). Kong *et al.* (2016) established a positive relationship between emotional intelligence and clinical ability, since nursing students with high emotional intelligence may have a better understanding of the patient's perspective and are also more likely to experience empathy. Hence, emotional intelligence may have a significant effect on customer-oriented behaviour among nursing students.

Previous studies have also established the relationship between emotional intelligence and behaviour (Ramachandran *et al.*, 2011; Robbins *et al.*, 2010; Shih and Susanto, 2010). Ramachandran *et al.* (2011) revealed that greater emotional intelligence ability enhances employees' deep acting, which contributes to the positive emotions required to promote employees' organisation citizenship behaviour. In addition, Kaur *et al.* (2015) portrayed a significant relationship between emotional intelligence and the caring behaviour of nurses. Wang and Chang (2016) proved that positive emotion expression and negative emotion repression were found to positively influence customer-oriented behaviour.

Literature has extensively covered the predictive ability of emotional intelligence on an individual's behaviour. This merits the inclusion of the construct as one of the exogenous variables in the present study. However, the mediating role of emotional intelligence on the relationship between Big Five personality traits, digital literacy and customer-oriented behaviour is still not well established. Therefore, the present study is taking a step further to evaluate the mediating effect of emotional intelligence on the relationship between Big Five personality traits, digital literacy and customer-oriented behaviour among Malaysian nursing students in the public nursing colleges.

1.3 Problem Statement

Healthcare is a critical service environment due to the unpredictable situations, demanding patients, workload and complexity of the Organisation (Bruno, Dell'Aversana and Zunino, 2017). Healthcare in Malaysia is predominantly under the Ministry of Health (MoH) and has undergone revolutionary changes to achieve its goal of assisting people in attaining and maintaining a particular degree of health status, leading to an economically and socially healthy lifestyle (Ministry of Health, 2019). The public and private healthcare sectors provide first-contact primary care concurrently and these sectors are completely separated into organisational, financing, and governance (Chin *et al.*, 2019).

The present study focuses on Malaysia's public healthcare sector since its service is significantly received by the majority of Malaysia's population (Quek, 2014). The expectations and motivations of public service employees are different from their private counterparts. In general, scholars presume that public service motivation is a form of work motivation that results in greater dedication, involvement and performance (Bellé and Cantarelli, 2012). Public sector consumers expect service providers' personnel to practise customer-oriented behaviour and to be involved in value creation (Mustak *et al.*, 2013).

Customer-oriented behaviour is a key factor in healthcare services. It facilitates better relationships and interactions between healthcare personnel and patients (Ong and Johari, 2013). In the hospital context, nurses' customer-oriented behaviour is essential in assisting hospitals to attain positive feedback from patients since performance is largely affected by the treatment received by patients from nursing staff (Rad *et al.*, 2010). Consistently, nursing staff play important roles in today's healthcare system and constitute the majority of positions in any hospital (Atefi, 2014). Nurses are in high demand not only in developed countries but also in developing countries like Malaysia (Barnett *et al.*, 2010). The demand for nursing personnel has increased due to ageing populations, increased consumer activism, the rapid evolution of medical technologies evolution (Simoens *et al.*, 2005), as well as

population growth and the associated burden of disease (Atefi, 2014; Barnett *et al.*, 2010).

Drastic growth in the number of schools and nursing colleges, nursing students and the subsequent increment of new graduates within the workforce can be observed (Barnett *et al.*, 2010). This is due to the increasing demand for nursing staff, especially in the public healthcare sector (MoH, 2019). Notably, Malaysia has the lowest nurse density in the region as compared to the neighbouring countries (Barnett *et al.*, 2010). Malaysia requires 174,400 registered nurses by the year 2020 with a target of a 1:200 nurse to patient ratio as per the World Health Organisation (WHO) (MoH, 2019). However, Malaysia still lacks quite a number of registered nurses.

Healthcare services presently are under strain due to the increasing burden of illness and demographic changes of healthcare consumers, which are stretching the healthcare system's capacity to meet demand (Gardner *et al.*, 2013). Researchers found that nursing shortages affect the nursing workforce and patient health outcomes on a global, national, and regional scale (Littlejohn *et al.*, 2012). According to Richardson (2011), the nursing staff shortage affects nurses' turnover rate, patient safety and quality of care while the remaining nurses experience greater burnout, poor health outcomes, and reduced retention. The implications of this sustained pressure on the nursing team as a whole are demonstrated in the medical incident reports by rising staff illness rates, escalating complaints and evolving topics (Dugdall *et al.*, 2004).

A similar scenario plays out in Malaysia's healthcare sector. Previous studies posited that the country lacks the required capacity of registered nurses, especially in the public sector (Barnett *et al.*, 2010; Quek, 2014). The shortage of nurses and doctors has been recognised as a major issue faced by public hospitals as it has intensified the public healthcare personnel's workload and work-related pressure (Francis *et al.*, 2021). To address these issues, Barnett *et al.* (2010) argued that younger nurses with less experience are more likely to be staffed in the patient care areas. Moreover, different attitudes might be portrayed by new nursing graduates

toward patients and their superiors, which might be a contributing factor to the widespread criticisms of nurses involving their dissatisfactory attitudes toward patients and decline in standard service delivery performance (Arsat *et al.*, 2021; Barnet *et al.*, 2010).

The aforementioned issues are reflected in the high number of complaints received by the Ministry of Health between 2012 and 2015 (Public Complaints Bureau, 2012, 2013, 2014, 2015). The complaints from consumers/patients/public included poor communication skills and services among doctors and nurses, unsatisfied service quality, long waiting times, and insufficient equipment. A more recent report from the MoH revealed that the number of complaints increased from 5,154 in 2015 to 6,966 in 2017 (MoH, 2019). Although dissatisfaction with nursing services was not highlighted in the MoH's reports, findings from related studies suggest that the factor might contribute significantly to the public complaints about health service delivery (Francis *et al.*, 2021). For instance, satisfaction with nursing services was identified to contribute significantly to the overall perceptions of a hospital's service quality (Arsat *et al.*, 2021).

The reasons for the aforementioned events are not far-fetched. Nurses constitute the majority of positions in any hospital (Atefi, 2014) and the duration of interaction between nurses and patients is considered the longest of any other workforce in the hospital (Fleischer *et al.*, 2009). In addition, patients are unable to properly assess the value of medical treatment technologies and tend to rely on behaviours and interpersonal interactions as a measure of assessment (Yoon *et al.*, 2007). The interpersonal interactions between consumers and service providers often influence consumers' evaluation of service encounters thus customer-oriented behaviour is crucial in the service industry (Bruno *et al.*, 2017; Dan *et al.*, 2021).

Customer-oriented behaviour involves actively listening to consumers during service encounters and directing the necessary efforts to satisfy consumers' needs (Jung *et al.*, 2016). Customers view service providers' pro-social behaviour as customer-oriented behaviour, which significantly influences customers' evaluations of the service quality delivered and the resulting customer satisfaction (Converso *et*

al., 2015; Bruno *et al.*, 2017). Customer-oriented behaviour is a key antecedent in healthcare services and it is a key strategy to achieve higher service quality in the healthcare sector (Olaniyi *et al.*, 2013). Since nurses are the majority of the hospital workforce, healthcare providers must be aware of the importance of nurses' customer-oriented behaviour which acts as the fundamental value of maintaining a high standard of patient care (Chen and Chen, 2010).

Aligning with customer-oriented behaviour, the personality traits of the existing workforce have received exceptional interest among researchers (Olaniyi *et al.*, 2013). Previous studies that personality traits can predict and explain human behaviour at work (Schultz and Schultz, 2016) and have a significant relationship with customer-oriented behaviour (Johari and Ong, 2013; He *et al.*, 2015). The personality traits of healthcare service personnel have been impacted by the shortage of nursing workforce or staffing capacity (Olaniyi *et al.*, 2013). Nurses' conscientiousness levels were affected because they need to meet several deadlines and adhere to certain performance standards, and execute their entrusted obligations (Olaniyi *et al.*, 2013). These events culminate into blurred imagination, insensitivity, and lack of intellectual interest, which are all under the openness to experience dimension. In terms of agreeableness, most are rated to be flawed as they are perceived as being non-sympathetic, non-cooperative, harsh and disrespectful in their attitude to their jobs (Kenn-Ndubuisi and Akani, 2015). Moreover, nurses are more likely to acquire negative traits of neuroticism such as frustration, moodiness, worry, fear and feeling anxiety, while positive traits such as emotional stability, calmness and security are undervalued (Kenn- Ndubuisi and Akani, 2015). These negative personality traits are attributed to stressful circumstances and heightened pressure in the healthcare industry (Suleiman, 2013; Francis *et al.*, 2021).

Furthermore, technological advances such as mobile devices have revolutionised human interaction by facilitating virtually limitless access to communication and information (Madeira *et al.*, 2009). Studies on the utilisation of mobile learning and new technologies are becoming prevalent in higher education, which aims to promote student learning (Bozalek *et al.*, 2015; Pimmer and Pachler, 2014). As a result of technological advancements and the current generation being

more digital literate, the use of virtual worlds in nursing education and clinical practice is vital in developing nursing students' clinical reasoning abilities. The realism and authenticity of virtual simulation environments have been improved through the advancement of simulation technology, thus increasing the learning attitudes, responses, satisfaction as well as cognitive and affective outcomes among nursing students (Kim *et al.*, 2016).

Simulation activities have the capacity to diversify knowledge acquisition well beyond the context of technical skills associated with patient care (Harris *et al.*, 2014). In fact, nursing accreditation bodies encourage nursing schools to incorporate nursing informatics and technology courses into their curricula to equip nursing students to practise in a technology-enabled clinical context (Cao *et al.*, 2013). Health information technology together with the Internet of Medical Things (IoMT) would offer meaningful information and tools to clinicians, such as assistance for clinical decision making. These technological advancements will enhance the quality of care and minimize potential medical errors. Thus, technology in nursing education may also influence customer-oriented behaviour.

Numerous studies have also established the relationship between emotional intelligence and behaviours (Ramachandran *et al.*, 2011; Robbins *et al.*, 2010; Shih and Susanto, 2010). Customer-oriented behaviour is considered one of the most important workplace behaviours required and demanded in the current era, especially in intense service-oriented industries like public healthcare (Ong and Johari, 2013). Evaluating the influence of emotional intelligence on customer-oriented behaviour is another high-prominence issue as past research has shown a strong, significant influence of emotions on different workplace outcomes (El Othman *et al.*, 2020; Taneja *et al.*, 2020).

Nursing can be perceived as a challenging career in a tense work atmosphere (Kaya *et al.*, 2018). Nurses must possess emotional intelligence in order to recognize patients' needs and make timely and accurate judgments, as well as the ability to assess complex information about patients from various perspectives (Fidanci *et al.*,

2012; Kaya and Yalniz, 2012). In this regard, it is essential to develop these skills throughout undergraduate studies (Kaya *et al.*, 2018).

The mediating effect of emotional intelligence has also been reported in a few studies. Emotional intelligence was found to mediate the association between psychological well-being and emotional labour (Kang and Bae, 2015). The authors recommended the need for hospitals to develop training and education programs to promote emotional intelligence and nurses' psychological well-being. Meanwhile, the mediating effect of emotional intelligence on the association between earnings and personality traits was demonstrated by De Haro *et al.*, (2018). These findings reflect that emotional intelligence might predict the relationship between personality traits and customer-oriented behaviour.

1.4 Research Gap

The aforementioned discussion highlights the multidimensional characteristics of customer-oriented behaviour in the healthcare sector. Specific emphasis on the potential role of personality traits, digital illiteracy, and emotional intelligence in influencing customer-oriented behaviour among nurses was provided. The potential relationships between these concepts could be gleaned from a few studies conducted in Malaysia.

One of the related studies was by Ong and Abidin (2016) on the relationship between personality traits and customer-oriented behaviour and job satisfaction among nurses in the Malaysian health tourism industry. The researchers employed a quantitative cross-sectional survey approach to gathering the data, which were then analysed using factor and hierarchical regression analyses. Resultantly, nurses' customer-oriented behaviour was positively influenced by extraversion and agreeableness, whereas job satisfaction was identified as a quasi-moderator with a positive interactive effect on extraversion in predicting customer-oriented behaviour. Apart from the study conducted by Ong and Abidin (2016), no other research

focused on customer-oriented behaviour in the healthcare industry as previous studies reporting the association between employees' behaviour and personality traits were in the hospitality sector (Lee *et al.*, 2006), retail industry (Agnihotri *et al.*, 2012), and financial institutions (George and Purva, 2004).

A recent study focused on the quality of work-life (QoWL) among nurses in Sarawak, Malaysia, since they represent the largest health care groups and the leading front liners in hospital settings (Francis *et al.*, 2021). The researchers found that 52.9% of the 461 sampled nurses were dissatisfied with their QoWL, with factors such as relation, cooperation, autonomy of work, prolonged working hours, and resources adequacy as the main determinants of unsatisfactory QoWL. Two concepts from these research findings (prolonged working hours – job burnout and resources adequacy) are vital in the subsequent discussion presented in this section.

Arsat *et al.* (2022) recently investigated the predictors of nurses' caring behaviour - a vital customer-oriented behaviour, among 3,532 nurses working in public hospitals in Sabah, Malaysia. The researchers found that staffing and resource adequacy demonstrated a negative effect on the nurses' caring behaviour. These findings contradict the previous reports that adequate staffing and provision of advanced health care facilities will improve service delivery, especially in the area of low nurses to patient's ratio. Nevertheless, the results were based on subjective views of nurses rather than empirical research, hence, certain underpinning personality traits might explain nurses' perspectives regarding their customer-oriented behaviour. These events require further investigation.

Prolonged working hours and job burnout were also linked to emotional labour in a study conducted among female teachers in Malaysia (Noraini and Zianuddin, 2011). The study revealed that emotional labour and work-family conflict contributed to explaining the variance in female teachers' burnout, comprising emotional exhaustion and depersonalisation. Given that nurses have direct contact with patients, job burnout arising from emotional labour could severely affect patient interactions and the level of service delivered (Van Mol *et al.*, 2014; Francis *et al.*, 2021). Although these studies highlighted the potential connection between

emotional intelligence and customer-oriented behaviour among healthcare service providers, there is data paucity to support such a relationship in the Malaysian context.

As discussed previously, Malaysia has also witnessed an exceptional transformation in its healthcare system as a result of technological advances in communication and information (Arsat *et al.*, 2021). The utilisation of mobile learning and new technologies in Malaysia's higher educational institutions has been evident in recent research (Thang *et al.*, 2016; Chung *et al.*, 2020). Nursing education is a vital aspect in the area of virtual learning given the high digital literacy among the Malaysian population (Chung *et al.*, 2020). The government is also investing in modern technology to equip healthcare providers in the country with the necessary skills and expertise for effective service delivery and patient outcomes (Thang *et al.*, 2016). However, no study has investigated if digital literacy among healthcare personnel influences their customer-oriented behaviour in the Malaysian context.

Personality traits, digital literacy, and emotional intelligence are vital concepts that ought to be instilled in nurses during their undergraduate studies (Ong and Johari, 2013). For instance, previous work reflected that nursing educational curriculum should be designed to incorporate courses relating to emotional intelligence and personality traits to equip nurses with the ability to assess complex information about patients from various perspectives (Fidanci *et al.*, 2012; Kaya and Yalniz, 2012; Kaya *et al.*, 2018). Meanwhile, despite the reported rise of criticisms of the new generation of nursing graduates, the perspectives of customer-oriented behaviour among Malaysian nursing students are not well understood (Barnett *et al.*, 2010). Therefore, there is a need to study customer-oriented behaviour and it could be improved among Malaysian nursing students. Such information would be valuable in improving Malaysia's healthcare standards.

Another important insight is the potential mediating effect of emotional intelligence in the relationship between personality traits and customer-oriented behaviour among nursing students. In fact, no study has investigated if emotional

intelligence mediates the aforementioned relationship among personnel in the public healthcare sector. Whereas Kang and Bae (2015) reported the mediating effect of emotional intelligence in the relationship between emotional labour and psychological well-being, De Haro *et al.* (2018) posited its mediating role in the association between personality traits and customer-oriented behaviour. The only local study regarding the mediating role of emotional intelligence focused on the relationship between physical activity and mental distress among Malaysian University students (Dev *et al.*, 2016). Therefore, the mediating effects of emotional intelligence on the relationship between personality traits, digital literacy and customer-oriented behaviour among Malaysian nursing students need to be explored.

1.5 Research Questions

Based on the gaps in the literature, this study seeks answers to the following research questions:

- i. To what extent do the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) affect the customer-oriented behaviour among Malaysian nursing students?
- ii. To what extent does digital literacy affect customer-oriented behaviour among Malaysian nursing students?
- iii. To what extent do the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) affect the emotional intelligence of Malaysian nursing students?
- iv. To what extent does digital literacy affect the emotional intelligence of Malaysian nursing students?

- v. To what extent does emotional intelligence affect customer-oriented behaviour among Malaysian nursing students?

- vi. To what extent does emotional intelligence mediate the relationship between the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism), digital literacy and customer-oriented behaviour among Malaysian nursing students?

1.6 Research Objectives

Based on the research questions, this study aims to achieve the following research objectives:

- i. To examine the effects of the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) on customer-oriented behaviour among Malaysian nursing students.

- ii. To examine the effect of digital literacy on customer-oriented behaviour among Malaysian nursing students.

- iii. To examine the effects of the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) on the emotional intelligence of Malaysian nursing students.

- iv. To examine the effect of digital literacy on the emotional intelligence of Malaysian nursing students.

- v. To examine the effect of emotional intelligence on customer-oriented behaviour among Malaysian nursing students.

- vi. To examine the role of emotional intelligence in mediating emotional the relationship between the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness and neuroticism), digital literacy and customer-oriented behaviour among Malaysian nursing students.

1.7 Research Scope

This study aims to investigate the influence of Big Five personality traits and digital literacy on customer-oriented behaviour, and these relationships are mediated by emotional intelligence among students in Malaysian public nursing colleges. The present study focused on the public healthcare sector in Malaysia since its service is significantly received by the majority of the country's population (Quek, 2014). Notably, about 70% of public health services are utilised by the majority of Malaysia's population, attracting the needy and financially-stretched patients (Market Watch, 2012). Thus, the present study focuses on the public healthcare sector.

Nursing students in public nursing colleges were selected as respondents in this study given that they are the future workforce in the public healthcare sector. Nurses constitute the biggest workforce in the Malaysian healthcare system (Barnett *et al.*, 2010) and they are considered to engage in the longest interactions with patients in comparison to other hospital personnel (Fleischer *et al.*, 2009). Studies have reported dissatisfying attitudes towards patients and deteriorated performance in standard service delivery among nursing professionals in the country (Barnett *et al.*, 2010; Francis *et al.*, 2021). Additionally, dissatisfied service quality complaints have been increasing for years (MoH, 2019). These complaints are believed to include nursing services since satisfaction with their services has been demonstrated to impact significantly on patients' perception of overall service quality (Ong and Johari, 2013). Therefore, the present study aims to investigate customer-oriented behaviour among Malaysian nursing students in public nursing colleges.

The population frame for this study comprises nursing students in public nursing colleges. There are 25 public nursing colleges, known as *Institut Latihan Kementerian Kesihatan Malaysia (ILKKM)* under the MoH nationwide that offer Diploma and extension nursing courses. Eligible nursing students are entitled to scholarships and allowances for books, project proposals, uniforms and tools throughout the course (MoH, 2018).

1.8 Significance of Research

Owing to the rapid expansion of the healthcare industry and the increasing population of educated individuals, nursing care services have received higher demand and expectations. The service quality and standard of nursing care might be improved by integrating a customer-orientation approach into the organisation (Peccei and Posenthal, 2001). Thus, this study sought to explain the influence of Big Five personality traits and digital literacy on customer-oriented behaviour among Malaysian nursing students. Additionally, this study investigates the mediating effect of emotional intelligence on the relationship between the aforementioned concepts. It is anticipated that customer-oriented behaviour will improve the standard of nursing care among Malaysian nursing students. Hence, the findings of this study are expected to have theoretical and managerial implications.

In terms of theoretical implications, the present study proposes a conceptual framework for customer-oriented behaviour for the public healthcare sector. This study will provide a better understanding of the Big Five personality traits and digital literacy and incorporate the concept of customer-oriented behaviour among nursing students to meet patients' needs and consequently improve their service behaviour. Previous research on customer-oriented behaviour was conducted in different contexts such as banking, restaurants, insurance companies, financial institutions and commodity organisations (Chen and Chen, 2010). However, this study focused on nursing students in public nursing colleges as there were only a few studies that had been done in the area of the healthcare industry, (Johari and Ong, 2013; Mechinda and Patterson, 2011).

This study also seeks to contribute to the current body of knowledge by integrating emotional intelligence as a mediating variable that may strengthen the relationship between the Big Five personality traits, digital literacy, and customer-oriented behaviour. It introduces a new significant variable to the framework of customer-oriented behaviour focusing on nursing students and theoretically supports the role of emotional intelligence as a mediating variable in Malaysian public healthcare. Moreover, the findings of this study are anticipated to be applicable to future research involving frontline employees in other service industries, including banking, insurance, beauty and salon, immigration, hospitality and tourism.

The population considered in this study is also very important from a theoretical aspect. Prior researchers have studied personality traits, digital literacy, emotional intelligence and customer-oriented behaviour among different populations, including nurses, bankers and salespeople (Chen and Chen, 2010; Ong and Johari, 2013). Nevertheless, the model and relationships have never been tested on nursing students. This research is highly significant from Malaysia's point of view as this is the first attempt to expound and investigate the model in the country's context, especially in the healthcare sector. Previous studies on customer-oriented behaviour were conducted in western countries (Bellou, 2009), Pakistan (Altaf *et al.*, 2011), Taiwan (Chih, *et al.*, 2009), and Thailand (Mechinda and Patterson, 2011). Only a few studies on customer-oriented behaviour have been undertaken in the Malaysian landscape. For example, Johari and Ong (2013) focused on the health tourism context while customer-oriented behaviour was not considered in the recent studies that involved nurses (Arsat *et al.*, 2021; Francis *et al.*, 2021). Besides, the findings of prior studies in other countries may not reflect the terms of customer-oriented behaviour among Malaysian nursing students. Hence, examining the relevance and validity of customer-oriented behaviour in Malaysia would contribute significant insights to the existing literature.

In terms of managerial implications, the findings of the present study may offer useful information and a better understanding of the determinants that would help the course registrar in recruiting and enrolling customer-oriented nursing

students. The course registrar might utilise the information as a foundation to identify the right candidates having the potential to demonstrate customer-oriented behaviour. Furthermore, the role of emotional intelligence in leading to customer-oriented behaviour is an imperative contribution of this study. Findings from this study could be considered by course registrars in customising and designing training programs related to emotional intelligence to improve nursing students' customer-oriented behaviour.

1.9 Operational Definition of Terms

A number of terms are used frequently in this study and it is apparently important to define them for better clarity and understanding. These terms are defined as follows:

1.9.1 Big Five personality traits: refers to the general behaviour properties which are characterised by inter-individual variability and intra-individual time and situation constancy based on biological conditioning (McCrae and John, 1992).

1.9.2 Openness to experience: defines an individual's inclination to seek various life experiences and positive valuation of thereof, tolerance of novelties and cognitive curiosity (McCrae and Costa, 2005).

1.9.3 Conscientiousness: a dimension which describes people's attitude to work and determines level of their organisation, persistence and motivation in actions (McCrae and Costa, 2005).

1.9.4 Extraversion: refers to the quality and quantity of social interactions and determines the level of activity and energy, and also ability to experience positive emotions (McCrae and Costa, 2005).

- 1.9.5 Agreeableness:** a dimension referring to positive vs. negative attitude to other people, kind of personal orientation understood as altruism vs. antagonism, demonstrated in feelings, thoughts and actions. On the cognitive level, this feature appears as trust to others, on the emotional level it is sensitivity or indifference to other people's issues, and on the behavioural level it means either cooperative or competitive approach (McCrae and Costa, 2005).
- 1.9.6 Neuroticism:** refers to the vulnerability to experiencing negative emotions like anxiety, discontentment, feeling of guilt, anger, and also sensitivity to psychological stress (McCrae and Costa, 2005).
- 1.9.7 Digital literacy:** represents the ability of an individual to effectively perform tasks within a digital setting. Digital literacy includes the ability to read and interpret media, reproduce data and images via digital manipulation as well as evaluate and apply new information and knowledge gained from the digital environments (Jones and Flanningan, 2006).
- 1.9.8 Emotional intelligence:** the ability of an individual to understand his or her own and others' emotions in a timely manner and utilise those emotions wisely to produce desirable results (Mayer and Salovey, 1997).
- 1.9.9 Customer-oriented behaviour:** refers to particular behaviour exhibited by individuals during service encounters and such behaviour will lead to customer satisfaction (Farrell *et al.*, 2001). Customer-oriented behaviour is conceptualised from customer orientation, as a concept and conviction that always prioritises the customer's interest. In the healthcare context, customer-oriented behaviour refers to the service behaviour and willingness of care providers to render their service delivery in order to reflect patients' realities (Daniel and Darby, 1997).

1.9.10 Nursing students: students in a post-secondary educational programme that leads to certification and licensure of nursing practises, often as part of a programme managed by a nursing school. In other words, nursing students are students who are enrolled in a practical nurse programme. A nursing student can be enrolled in a programme that leads to a diploma, associate degree or a Bachelor of Science in nursing (Barnett *et al.*, 2010).

1.10 Organisation of the Thesis

Chapter 1 – Introduction; provides the background information for the present study and the statement of the problem that addresses the importance of customer-oriented behaviour among nursing students. The concepts of personality traits, digital literacy, and emotional intelligence were presented. This chapter also outlines the research questions, research objectives, research scope and significance of the study in terms of theoretical and managerial implications. Finally, this chapter describes the operational definitions to provide a clear overview of the terms frequently used in this study.

Chapter 2 – Literature Review; reviews and discusses extensively the literature on customer-oriented behaviour, personality traits, digital literacy, and emotional intelligence. Previous studies on customer-oriented behaviour relating to personality traits, digital literacy, and emotional intelligence are particularly addressed according to the research objectives. An extensive review of these variables in terms of definition, conceptualisation, theories, and their interrelationships provide a better explanation and justification of the proposed research framework and hypotheses development. In this chapter, the underpinning theories are highlighted and explained to depict potential the relationship between the variables.

Chapter 3 – Research Methodology; provides an in-depth discussion on the methodology used in this study for data collection and analyses, which includes the

research design, sampling procedure, and data collection instrument. Furthermore, this chapter describes the procedure for the reliability and validity tests, as well as the data collection and analysis techniques, which may aid future research replication, validation and expansion of the findings.

Chapter 4 – Analyses and Findings; reports the results of the data analysis and hypotheses testing. The descriptive, validity and reliability analyses are performed using the Statistical Package for Social Sciences (SPSS), version 26. Meanwhile, a computer programme called the Smart Partial Least Square (PLS) version 3.1 is used to perform analyses on the measurement and structural models, involving discriminant analysis, structural equation modelling, and mediation analysis.

Chapter 5 – Discussion and Conclusion; discusses and concludes research findings relative to the research objectives, as well as compares the results with existing and previous literature. The contributions of the research findings in terms of theoretical and managerial implications were also highlighted. Finally, the limitations of the study and future work recommendations were outlined.

1.11 Chapter Summary

This chapter has clearly described the introduction and background of the study. The research problems and research gaps were also identified in this chapter, which outlines the corresponding research questions and objectives. Additionally, the selection of research variables was also explained, followed by the research scope, and the significance of the research in terms of theoretical and managerial implications. The operational definitions of the terms frequently used in the present study were also outlined. Lastly, the concluding aspect summarises the organisation of the thesis. The next chapter presents the theoretical foundation, a critical review of existing literature, the research model, and research hypotheses.

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Appendix A Data collection consent letter

 <p>International Business School (UTM IBS) UTM Kuala Lumpur</p>	<p>International Business School (UTM IBS) Level 10, Menara Razak Universiti Teknologi Malaysia Jalan Sultan Yahya Petra 54100 Kuala Lumpur, Malaysia</p>
<p>Tel: +(6)03-21805023/5024/5031/5080 Fax: +(6)03-21805608 http://www.ibs.utm.my</p>	
<p>OUR REF.:</p>	<p>Our References : UTM.K.55.01.03/13.11/1/4 Date : 3 January 2019</p>
<p>TO WHOM MAY IT CONCERN</p>	
<p>Dear Sir/Madam,</p>	
<p>REQUEST TO CONDUCT AN ACADEMIC RESEARCH / PERMISSION TO COLLECT DATA</p>	
Name	: AERVINA BINTI MISRON
I/C No. @ Passport No.	: 930406-08-6344
Matric No.	: PBS183006
Admission Status	: Full Time
Registration Date	: 02 September 2018
Medium of Instruction	: English
Programme	: Doctor of Philosophy

With regard to the above matter, this is to certify that **Aervina binti Misron (PBS183006)** is pursuing Doctor of Philosophy (PhD) at Azman Hashim International Business School, Universiti Teknologi Malaysia (UTM).

The student is currently conducting a research on a title "**A FRAMEWORK OF CUSTOMER-ORIENTED BEHAVIOUR AMONG MALAYSIAN NURSING STUDENTS**". In order to fulfill her research requirement, it would be greatly appreciated if you could allow her to conduct interview, distribute questionnaires and collect data on related topic.

Data collection will be used for academic purpose only and shall remain confidential and will not be identify in publication or media.

Please contact Mdm Norharyani Hamid at 03-21805032 or email to norharyani.kl@utm.my for further clarification to the above student.

Thank you in advance.

"BERKHIDMAT UNTUK NEGARA"

I, who uphold trust,



NORHARYANI BINTI HAMID
Assistant Registrar
Azman Hashim International Business School
☎ : 03-21805032
✉ : norharyani@utm.my





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Appendix B Research questionnaire



RESEARCH QUESTIONNAIRE

On

A FRAMEWORK OF CUSTOMER-ORIENTED BEHAVIOUR AMONG MALAYSIAN NURSING STUDENTS

Researcher

Aervina Binti Mison
PhD Student
Azman Hashim International Business School
Faculty of Management
Universiti Teknologi Malaysia, 81310 Johor, Malaysia
Contact Number: +6018-9033007
E-mail : aervina64@gmail.com

SECTION A: DEMOGRAPHIC CHARACTERISTICS

Kindly select the appropriate answer and tick at related box. All data will be kept confidential and will be used for research purposes only.

1. Gender

(a) Male

(b) Female

2. Age (years)

(a) Less than 20

(b) 20 - 30

(c) 31 - 40

(d) 41 - 50

(e) 51 above

3. Marital status

(a) Single

(b) Married

(c) Others

4. Highest education background

(a) SPM/STPM/A-Level

(b) Diploma

(c) Bachelor Degree

(d) Postgraduate

(e) Others

5. Which year are you now as student at Institut Latihan Kementerian Kesihatan Malaysia?

(a) First year

(b) Second year

(c) Third year

(d) Others

6. Reason of joining Nursing Course?

(a) Self interest

(b) Peer influence

(c) Family encouragement

(d) Career security

(e) Others

7. Location of your ILKKM?

Note: Northern region: Perlis/Kedah/Pulau Pinang/Perak, Central region: Selangor/Negeri Sembilan, Southern region: Melaka/Johor, East-Coast region: Pahang/Terengganu/Kelantan, East Malaysia: Sabah/Sarawak

(a) Northern region

(b) Central region

(c) Southern region

(d) East-coast region

(e) East Malaysia

Please rate and tick one for each items as to the extent/desire that displayed the following with your level of agreement:

1-Strongly disagree 2- Disagree 3- Neutral 4- Agree 5- Strongly agree

SECTION B (I): BIG FIVE PERSONALITY TRAITS

CODE	ITEMS	1	2	3	4	5
O1	I am curious about many things.					
O2	I always come up with new ideas.					
O3	I am creative and a deep thinker.					
O4	I am an imaginative person.					
O5	I am inventive.					
O6	I value artistic experiences.					
O7	I prefer work that is routine.					
O8	I like to reflect and play with ideas.					
O9	I have few artistic interests.					
O10	I am advanced in art, music or literature.					
C1	I can be somewhat careless.					
C2	I carry out my job thoroughly.					
C3	I am a reliable worker.					
C4	I tend to be disorganized.					
C5	I tend to be lazy.					
C6	I persevere until the task is finished.					
C7	I do things efficiently.					
C8	I make plans and follow through with them.					

C9	I am easily distracted.					
E1	I see myself as someone who is reserved.					
E2	I am talkative.					
E3	I am full of energy.					
E4	I am passionate and spirited.					
E5	I tend to be quiet.					
E6	I have an assertive personality.					
E7	I am sometimes shy and inhibited.					
E8	I am outgoing and sociable.					
A1	I am helpful and unselfish with others.					
A2	I tend to find fault with others.					
A3	I tend to start quarrelling with others.					
A4	I have a forgiving nature.					
A5	I am generally trusting.					
A6	I can be cold and isolated.					
A7	I am considerate and kind to almost everyone.					
A8	I am sometimes rude to others.					
A9	I like to cooperate with others.					
N1	I am relaxed and can handle stress well.					
N2	I am depressed and blue.					
N3	I can be tense.					
N4	I worry a lot.					
N5	I am emotionally stable and not easily upset.					
N6	I can be moody.					
N7	I remain calm in tense situation.					
N8	I get nervous easily.					

SECTION B (II): DIGITAL LITERACY TRAIT

CODE	ITEMS	1	2	3	4	5
DL1	I enjoy using digital devices.					
DL2	I feel comfortable using digital devices.					
DL3	I am aware of various types of digital devices.					
DL4	I understand what digital literacy is.					
DL5	I am willing to learn more about digital technologies.					
DL6	I feel threatened when others talk about digital technologies.					
DL7	I feel that I am behind my fellow students in using digital technologies.					
DL8	I think that it is important for me to improve my digital fluency.					
DL9	I think that my learning can be enhanced by using digital tools and resources.					
DL10	I think that training in technology-enhanced nursing learning should be included in nursing education programs.					

SECTION C: EMOTIONAL INTELLIGENCE

CODE	ITEMS	1	2	3	4	5
EI1	I know why my emotions change.					
EI2	I easily recognize my emotions as I experience them.					
EI3	I can tell how people are feeling by listening to the tone of their voice.					
EI4	By looking at their facial expressions, I recognize the emotions people are experiencing.					
EI5	I seek out activities that make me happy.					
EI6	I have control over my emotions.					

EI7	I arrange events others enjoy.					
EI8	I help other people feel better when they are down.					
EI9	When I am in a positive mood, I am able to come up with new ideas.					
EI10	I use good moods to help myself keep trying in the face of obstacles.					

SECTION D: CUSTOMER-ORIENTED BEHAVIOUR

CODE	ITEMS	1	2	3	4	5
COB1	I help patients by fulfilling their needs.					
COB2	I achieve goals by satisfying patients.					
COB3	I have the patient's best interest in mind.					
COB4	I get patients to discuss their needs with me.					
COB5	I influence a patient with information rather than by pressure.					
COB6	I offer nursing care best suited to the patient's needs.					
COB7	I find out nursing care most helpful to the patients.					
COB8	I answer patient's question about nursing care correctly.					
COB9	I use nursing care to solve patient's problem.					
COB10	I give patients an accurate expectation of nursing care.					
COB11	I figure out patient's needs.					

-END OF QUESTIONNAIRE. THANK YOU-

Appendix C Expert feedback and comments

Respondents	Statement
Expert 1	<i>“The questions are clear, easy to understand.”</i>
Expert 2	<i>“I think the questionnaire is quite lengthy. Words are clear and understandable. Overall is okay.”</i>
Expert 3	<i>“Appropriate to be answered by nursing students.”</i>
Expert 4	<i>“Variables tested are relevant for nursing students. All questions are brief and easy to understand.”</i>
Expert 5	<i>“Appropriate. Okay.”</i>
Expert 6	<i>“Questionnaire is comprehensive, clear and easy to understand. Just minor grammatical error.”</i>

Appendix D Content validity assessment

Item	Number of experts	Number of agreements	I-CVI ^a	P _C ^b	κ ^{*c}	Evaluation ^d	
Openness to experience							
O1		6	6	1.00	0.00	1	Excellent
O2		6	6	1.00	0.00	1	Excellent
O3		6	6	1.00	0.00	1	Excellent
O4		6	6	1.00	0.00	1	Excellent
O5		6	6	1.00	0.00	1	Excellent
O6		6	6	1.00	0.00	1	Excellent
O7		6	6	1.00	0.00	1	Excellent
O8		6	6	1.00	0.00	1	Excellent
O9		6	6	1.00	0.00	1	Excellent
O10		6	6	1.00	0.00	1	Excellent
			S-CVI/Ave ^e	1.00			
Conscientiousness							
C1		6	6	1.00	0.00	1	Excellent
C2		6	6	1.00	0.00	1	Excellent
C3		6	6	1.00	0.00	1	Excellent
C4		6	6	1.00	0.00	1	Excellent
C5		6	6	1.00	0.00	1	Excellent
C6		6	6	1.00	0.00	1	Excellent
C7		6	6	1.00	0.00	1	Excellent
C8		6	6	1.00	0.00	1	Excellent
C9		6	6	1.00	0.00	1	Excellent
			S-CVI/Ave ^e	1.00			
Extraversion							
E1		6	5	0.833	0.094	0.816	Excellent
E2		6	6	1.00	0.00	1	Excellent
E3		6	6	1.00	0.00	1	Excellent
E4		6	6	1.00	0.00	1	Excellent
E5		6	6	1.00	0.00	1	Excellent
E6		6	6	1.00	0.00	1	Excellent

E7	I am sometimes shy and inhibited.	6	6	1.00	0.00	1	Excellent
E8	I am outgoing and sociable.	6	6	1.00	0.00	1	Excellent
		S-CVI/Ave ^e		0.979			
Agreeableness							
A1	I am helpful and unselfish with others.	6	6	1.00	0.00	1	Excellent
A2	I tend to find fault with others.	6	6	1.00	0.00	1	Excellent
A3	I tend to start quarrelling with others.	6	5	0.833	0.094	0.816	Excellent
A4	I have a forgiving nature.	6	6	1.00	0.00	1	Excellent
A5	I am generally trusting.	6	6	1.00	0.00	1	Excellent
A6	I can be cold and isolated.	6	6	1.00	0.00	1	Excellent
A7	I am considerate and kind to almost everyone.	6	6	1.00	0.00	1	Excellent
A8	I am sometimes rude to others.	6	5	0.833	0.094	0.816	Excellent
A9	I like to cooperate with others.	6	6	1.00	0.00	1	Excellent
		S-CVI/Ave ^e		0.963			
Neuroticism							
N1	I am relaxed and can handle stress well.	6	6	1.00	0.00	1	Excellent
N2	I am depressed and blue.	6	6	1.00	0.00	1	Excellent
N3	I can be tense.	6	6	1.00	0.00	1	Excellent
N4	I worry a lot.	6	6	1.00	0.00	1	Excellent
N5	I am emotionally stable and not easily upset.	6	6	1.00	0.00	1	Excellent
N6	I can be moody.	6	6	1.00	0.00	1	Excellent
N7	I remain calm in tense situation.	6	6	1.00	0.00	1	Excellent
N8	I get nervous easily.	6	6	1.00	0.00	1	Excellent
		S-CVI/Ave ^e		1.00			
Digital literacy trait							
DL1	I enjoy using digital devices.	6	6	1.00	0.00	1	Excellent
DL2	I feel comfortable using digital devices.	6	6	1.00	0.00	1	Excellent
DL3	I am aware of various types of digital devices.	6	6	1.00	0.00	1	Excellent
DL4	I understand what digital literacy is.	6	6	1.00	0.00	1	Excellent
DL5	I am willing to learn more about digital technologies.	6	6	1.00	0.00	1	Excellent
DL6	I feel threatened when others talk about digital technologies.	6	6	1.00	0.00	1	Excellent
DL7	I feel that I am behind my fellow students in using digital technologies.	6	6	1.00	0.00	1	Excellent
DL8	I think that it is important for me to improve my digital fluency.	6	6	1.00	0.00	1	Excellent

DL9	I think that my learning can be enhanced by using digital tools and resources.	6	6	1.00	0.00	1	Excellent
DL10	I think that training in technology-enhanced nursing learning should be included in nursing education programs.	6	6	1.00	0.00	1	Excellent
				S-CVI/Ave ^e	1.00		
Emotional intelligence							
EI1	I know why my emotions change.	6	6	1.00	0.00	1	Excellent
EI2	I easily recognize my emotions as I experience them.	6	6	1.00	0.00	1	Excellent
EI3	I can tell how people are feeling by listening to the tone of their voice.	6	6	1.00	0.00	1	Excellent
EI4	By looking at their facial expressions, I recognize the emotions people are experiencing.	6	6	1.00	0.00	1	Excellent
EI5	I seek out activities that make me happy.	6	6	1.00	0.00	1	Excellent
EI6	I have control over my emotions.	6	6	1.00	0.00	1	Excellent
EI7	I arrange events others enjoy.	6	6	1.00	0.00	1	Excellent
EI8	I help other people feel better when they are down.	6	6	1.00	0.00	1	Excellent
EI9	When I am in a positive mood, I am able to come up with new ideas.	6	6	1.00	0.00	1	Excellent
EI10	I use good moods to help myself keep trying in the face of obstacles.	6	6	1.00	0.00	1	Excellent
				S-CVI/Ave ^e	1.00		
Customer-oriented behaviour							
COB1	I help patients by fulfilling their needs.	6	6	1.00	0.00	1	Excellent
COB2	I achieve goals by satisfying patients.	6	6	1.00	0.00	1	Excellent
COB3	I have the patient's best interest in mind.	6	6	1.00	0.00	1	Excellent
COB4	I get patients to discuss their needs with me.	6	6	1.00	0.00	1	Excellent
COB5	I influence a patient with information rather than by pressure.	6	6	1.00	0.00	1	Excellent
COB6	I offer nursing care best suited to the patient's needs.	6	6	1.00	0.00	1	Excellent
COB7	I find out nursing care most helpful to the patients.	6	6	1.00	0.00	1	Excellent
COB8	I answer patient's question about nursing care correctly.	6	6	1.00	0.00	1	Excellent
COB9	I use nursing care to solve patient's problem.	6	6	1.00	0.00	1	Excellent
COB10	I give patients an accurate expectation of nursing care.	6	6	1.00	0.00	1	Excellent
COB11	I figure out patient's needs.	6	6	1.00	0.00	1	Excellent
				S-CVI/Ave ^e	1.00		

Appendix E SPSS output

Demographic Statistics of Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	37	8.5	8.5	8.5
Female	400	91.5	91.5	100.0
Total	437	100.0	100.0	

Demographic Statistics of Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 20	0	0	0	0
20 -30	325	74.4	74.4	74.4
31 - 40	101	23.1	23.1	97.5
41 -50	11	2.5	2.5	100.0
51 above	437	100.0	100.0	

Demographic Statistics of Marital Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Single	282	64.5	64.5	64.5
Married	147	33.6	33.6	98.2
Others	8	1.8	1.8	100.0
Total	437	100.0	100.0	

Demographic Statistics of Educational Background

	Frequency	Percent	Valid Percent	Cumulative Percent
SPM/STPM	282	64.5	64.5	64.5
Diploma	144	33.0	33.0	97.5
Bachelor	3	.7	.7	98.2
Postgraduates	0	0	0	98.2
Others	8	1.8	1.8	100.0
Total	437	100.0	100.0	

Demographic Statistics of Year as Nursing Students

	Frequency	Percent	Valid Percent	Cumulative Percent
First year	41	9.4	9.4	9.4
Second year	119	27.2	27.2	36.6
Third year	227	51.9	51.9	88.6
Others	50	11.4	11.4	100.0
Total	437	100.0	100.0	

Demographic Statistics of Reason Joining Nursing Course

	Frequency	Percent	Valid Percent	Cumulative Percent
Self interest	170	38.9	38.9	38.9
Peer influence	5	1.1	1.1	40.0
Family Encouragement	170	38.9	38.9	78.9
Career security	75	17.2	17.2	96.1
Others	17	3.9	3.9	100.0
Total	437	100.0	100.0	

Demographic Statistics of Location of Respondents' ILKKM

	Frequency	Percent	Valid Percent	Cumulative Percent
Northern region	65	14.9	14.9	14.9
Central region	89	20.4	20.4	35.3
Southern region	207	47.4	47.4	82.7
East-coast region	41	9.3	9.3	92.0
East Malaysia	35	8.0	8.0	100.0
Total	437	100.0	100.0	

Descriptive Statistics of Openness to Experience

	N	Minimum	Maximum	Mean	Std. Deviation
O1	437	1	5	3.64	.912
O2	437	1	5	3.56	.697
O3	437	1	5	3.48	.794
O4	437	1	5	3.63	.893
O5	437	1	5	3.46	.724
O6	437	1	5	3.58	.782

O7	437	1	5	3.70	.796
O8	437	1	5	3.70	.800
O9	437	1	5	3.54	.773
O10	437	1	5	3.30	.910

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

Descriptive Statistics of Conscientiousness

	N	Minimum	Maximum	Mean	Std. Deviation
C1	437	1	5	3.15	.926
C2	437	2	5	3.75	.709
C3	437	1	5	3.76	.728
C4	437	1	5	2.85	1.005
C5	437	1	5	2.62	1.024
C6	437	1	5	3.69	.779
C7	437	1	5	3.76	.712
C8	437	1	5	3.78	.774
C9	437	1	5	3.17	.971

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

Descriptive Statistics of Extraversion

	N	Minimum	Maximum	Mean	Std. Deviation
E1	437	1	5	3.40	.842
E2	437	1	5	3.40	.889
E3	437	1	5	3.67	.796
E4	437	1	5	3.67	.810
E5	437	1	5	3.22	.944
E6	437	1	5	3.49	.750
E7	437	1	5	3.45	.883
E8	437	1	5	3.44	.835

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

Descriptive Statistics of Agreeableness

	N	Minimum	Maximum	Mean	Std. Deviation
A1	437	1	5	3.83	.836
A2	437	1	5	2.66	1.083
A3	437	1	5	2.65	1.089
A4	437	1	5	3.80	.800
A5	437	1	5	3.71	.781
A6	437	1	5	3.50	.910

A7	437	1	5	3.81	.764
A8	437	1	5	2.73	1.089
A9	437	1	5	3.87	.755

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

Descriptive Statistics of Neuroticism

	N	Minimum	Maximum	Mean	Std. Deviation
N1	437	1	5	3.76	.791
N2	437	1	5	2.40	1.059
N3	437	1	5	2.94	.963
N4	437	1	5	2.86	1.025
N5	437	1	5	3.35	.861
N6	437	1	5	3.10	.955
N7	437	1	5	3.39	.810
N8	437	1	5	3.14	1.002

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

Descriptive Statistics of Digital Literacy

	N	Minimum	Maximum	Mean	Std. Deviation
DL1	437	1	5	3.96	.789
DL2	437	1	5	3.93	.794
DL3	437	1	5	3.81	.809
DL4	437	1	5	3.77	.816
DL5	437	1	5	3.92	.783
DL6	437	1	5	2.99	.977
DL7	437	1	5	3.14	.943
DL8	437	1	5	3.95	.759
DL9	437	1	5	3.94	.764
DL10	437	1	5	3.93	.819

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

Descriptive Statistics of Emotional Intelligence

	N	Minimum	Maximum	Mean	Std. Deviation
EI1	437	1	5	3.91	.729
EI2	437	1	5	3.90	.707
EI3	437	2	5	3.85	.751
EI4	437	1	5	3.90	.736
EI5	437	1	5	3.95	.734
EI6	437	1	5	3.82	.750

EI7	437	1	5	3.63	.804
EI8	437	1	5	3.85	.758
EI9	437	1	5	3.96	.764
EI10	437	1	5	3.97	.744

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

Descriptive Statistics of Emotional Intelligence

	N	Minimum	Maximum	Mean	Std. Deviation
COB1	437	1	5	4.03	.711
COB2	437	1	5	4.02	.703
COB3	437	1	5	3.81	.739
COB4	437	1	5	3.83	.719
COB5	437	1	5	3.88	.686
COB6	437	2	5	4.01	.686
COB7	437	2	5	4.05	.682
COB8	437	1	5	3.92	.746
COB9	437	1	5	3.98	.731
COB10	437	1	5	3.87	.710
COB11	437	1	5	3.93	.723

Scale used is Likert Scale with (1-Strongly Disagree and 5-Strongly Agree)

LIST OF PUBLICATIONS

1. Misron, A., & Hee, O. C. (2021). A conceptual analysis of personality traits, emotional intelligence and customer-oriented behaviour among Malaysian nursing students. *International Journal of Academic Research in Business & Social Sciences*, 11(1), 276-295. <http://dx.doi.org/10.6007/IJARBSS/v11-i1/8475>.
2. Misron, A., & Hee, O. C. (2021). A conceptual analysis of tech-savvy trait, emotional intelligence and customer-oriented behaviour among Malaysian nursing students. *International Journal of Academic Research in Business & Social Sciences*, 11(2), 679-694. <http://dx.doi.org/10.6007/IJARBSS/v11-i2/8519>.